

ABSTRACT

A method for detecting a target moiety is disclosed. In one embodiment, a plurality of electrodes supported by a semiconductor substrate are brought into proximity with a reaction medium comprising a sample suspected of containing the target molecule. Each of the electrodes comprises at least one target probe. A plurality of cells within the semiconductor substrate are selectively addressed to apply a stimulus to each of the electrodes to activate a predetermined redox active moiety that is associated with an electrode and to detect, by means of the electrodes, corresponding responses produced as a result of the activation of the redox active moieties. The magnitude of the corresponding responses indicates the presence or absence of the target molecule in the sample.

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